

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1. - 16. (Canceled)

17. (Currently Amended) An automatic analyzer that analyzes samples using disposable parts arranged in part racks used in contact with the samples, comprising:

a supply lifter that raises configured to receive a plurality of part racks holding unused disposable parts, said supply lifter being mounted for vertical movement and positioned to raise the part racks to a rack separation station, while keeping the part racks stacked together;

a rack separator located at the rack separation station able to separate that separates an uppermost part rack of said part racks from remaining said part racks so as to retain the separated uppermost part rack at said rack separation station;

a recovery lifter positioned to be able to receive the separated part rack following processing that operates after the parts on the separated part rack have been consumed, said recovery lifter being mounted for vertical movement to move the separated part rack downward for recovery; and

a movable table having the supply lifter and the recovery lifter mounted thereon; ~~in a back-to-back relationship, wherein equipment for positioning the supply lifter and the recovery lifter is located between the supply lifter and the recovery lifter to achieve a compact configuration~~

a first motor coupled to a first belt, said first belt being coupled to said supply lifter for moving the supply lifter vertically; and

a second motor coupled to a second belt, said second belt being coupled to said recovery lifter for moving said recovery lifter vertically independently of said supply lifter,

wherein said first motor, said first belt, said second motor and said second belt are mounted to said movable table and located between the supply lifter and the recovery lifter to achieve a compact configuration.

18. (Currently Amended) The automatic analyzer according to claim 17, further including

a sensor positioned to sense part racks remaining on said supply lifter; and

a controller means for determining a quantity, said controller being able to determine the number of part racks remaining on said supply lifter based upon information received from said sensor.

19. (Currently Amended) The automatic analyzer according to claim 18, wherein further including

a display, wherein said controller means is able to determine includes means for determining a quantity the number of part racks that can be added to said supply lifter and means for displaying the quantity of part racks that can added to said supply lifter on said display.

20. (Currently Amended) The automatic analyzer according to claim 17, wherein
~~said equipment located between the supply lifter and the recovery lifter~~
includes:

~~said a first belt and first motor for controlling the position of the supply lifter,~~
and
~~— a said second belt extend upward from said movable table, and said supply lifter extends outward from said first belt in a first direction, and a second motor for controlling the position of the said recovery lifter extends outward from said second belt in a second direction opposite to said first direction.~~

21. (Currently Amended) The automatic analyzer according to claim 17, wherein
said supply lifter, said recovery lifter, and said movable table are housed in a
rack lift chamber having a door, said door including a lock,

~~wherein said door a controller means is included for is automatically locking~~
said door while said supply lifter or said recovery lifter is in operation for preventing access thereto to said rack lift chamber, and

wherein said controller means further includes means for unlocking said lock to enable said door is able to be opened when both of said recovery lifter and said supply lifter are in an inactive position, whereby part racks may be added or removed while said analyzer is able to continue to analyze samples.

22. (Currently Amended) The automatic analyzer according to claim 17, wherein

by pulling out said supply lifter, said recovery lifter and said moveable table are housed in an enclosed rack lift chamber, and said movable table is slideably mounted to move out of the rack lift chamber through a door, whereby an operator is able to pull the moveable table out of the rack lift chamber to add part racks holding parts to said supply lifter or remove used part racks from said recovery lifter while said analyzer is able to continues to analyze samples.

23. (Currently Amended) An automatic analyzer that analyzes samples using parts arranged in part racks, comprising:

a supply lifter configured to receive a plurality of part racks holding unused parts, said supply lifter being mounted for vertical movement and positioned to raise the part racks to a rack separation station, while keeping the part racks stacked together;

a rack separator located at the rack separation station able to separate an uppermost part rack of said part racks from remaining said part racks so as to retain the separated uppermost part rack at said rack separation station;

a recovery lifter positioned to be able to receive the separated part rack following processing, said recovery lifter being mounted for vertical movement to move the separated part rack downward for recovery;

a movable table having the supply lifter and the recovery lifter mounted thereon; ~~The automatic analyzer according to claim 17, wherein~~

a first rack position sensor positioned to sense ~~senses~~ the uppermost one of the part racks;

a second rack position sensor positioned to sense ~~senses~~ a second part rack located under the uppermost one of the stacked part racks arranged in the vicinity of said rack separation station; and

a controller means for determining ~~whether or not~~ said uppermost part rack has been properly separated from the other part racks on the basis of sensed information received from said first and second rack position sensors, ~~and based on the determination,~~ the controller means including means for judging ~~judges~~ whether to continue operation or interrupt the operation based on determination of whether said uppermost part rack has been properly separated ~~and sound an alarm.~~

24. (Currently Amended) An automatic analyzer that analyzes samples using parts disposed in part racks ~~used in contact with the samples and changed for each sample~~, comprising:

a supply lifter configured to receive a plurality of part racks, said supply lifter being mounted for vertical movement and positioned to raise ~~that raises a the~~

plurality of part racks ~~holding parts to~~ a rack separation station, while keeping the part racks stacked together;

~~— a recovery lifter for receiving part racks following processing;~~

a rack separator located at the rack separation station able to separate that separates an uppermost one of the stacked part racks so as to leave the uppermost part rack on a at the rack separation station;

one or more sensors positioned to sense whether the uppermost part rack has been properly separated from said stacked part racks; and

a controller means for determining the number of part racks remaining on the supply lifter whether to continue operation of the analyzer or interrupt operation of the analyzer based upon information received from said one or more sensors. ;

~~— a moveable table having the supply lifter and a recovery lifter mounted thereon; and~~

~~— equipment for positioning said supply lifter and said recovery lifter, said equipment being mounted to said movable table between said supply lifter and said recovery lifter to achieve a compact configuration.~~

25. (Currently Amended) The automatic analyzer according to claim 24, ~~wherein~~ further including

by pulling out a moveable table, wherein said supply lifter and said moveable table are housed in an enclosed rack lift chamber, and said movable table is slideably mounted to move out of the rack lift chamber through a door, whereby an

operator is able to pull the moveable table out of the rack lift chamber to add part racks holding parts to said supply lifter ~~or remove used part racks from said recovery lifter~~ while said analyzer continues to analyze samples.

26. (Currently Amended) The automatic analyzer according to claim 24, ~~wherein~~ further including

~~the equipment for positioning the supply lifter and the recovery lifter located between the supply lifter and the recovery lifter includes~~

a recovery lifter mounted for vertical movement and positioned to receive part racks following use;

a first belt and first motor for controlling the position of the supply lifter, and
a second belt and a second motor for controlling the position of the recovery lifter independently of the supply lifter.

27. (Currently Amended) The automatic analyzer according to claim 24, wherein

said supply lifter, ~~said recovery lifter, and said~~ is mounted on a movable table ~~are housed in a rack lift chamber having a door, said door including a lock,~~

wherein ~~said door~~ said controller means includes means for ~~is automatically locked- said door~~ while said supply lifter ~~or said recovery lifter is in operation for preventing access thereto to said rack lift chamber, and~~

wherein said controller means further includes means for unlocking said lock to enable said door is able to be opened when ~~both of said recovery lifter and said~~

supply lifter ~~are~~ is in an inactive position, whereby part racks may be added while said analyzer is able to continue to analyze samples.

28. (Currently Amended) The automatic analyzer according to claim 24, wherein further including

an alarm means for notifying an operator when a quantity is sounded should the number of part racks remaining on said supply lifter reach a predetermined threshold.

29. (Currently Amended) A part feeding device for a sample analyzer, comprising:

a supply lifter able to ~~move~~ receive a plurality of part racks while keeping the part racks stacked together, ~~the part racks each holding a plurality of parts, the supply lifter able~~ being mounted for vertical movement and positioned to raise the part racks to a rack separation station when the rack separation station is able to receive a new part rack;

a rack separator located at the rack separation station able to separate an uppermost ~~one part rack of the stacked part racks from the other~~ said part racks stacked on said supply lifter;

~~— a recovery lifter able to receive used part racks from which the parts have been consumed; and~~

a sensor positioned to sense said part racks remaining on said supply lifter;
and

a controller means for determining a quantity ~~able to determine a number of~~
part racks remaining on said supply lifter based upon information received from said
sensor ~~and a number of new part racks that can be added to said supply lifter.~~

30. (Currently Amended) The part feeding device according to claim 29, further
including wherein

a recovery lifter mounted for vertical movement and positioned to receive
used part racks,

wherein said supply lifter and said recovery lifter are mounted on a movable
table ~~in a back-to-back relationship,~~ and

wherein equipment for controlling positions of said supply lifter and said
recover lifter is mounted to the movable table between said recovery lifter and said
supply lifter to achieve a compact configuration for enabling the movable table to be
pulled out for access to the supply lifter and the recovery lifter.

31. (Currently Amended) The part feeding device according to claim 30, wherein

the equipment for positioning the supply lifter and the recovery lifter located
between the supply lifter and the recovery lifter includes

a first belt and first motor for controlling the position of the supply lifter, and

a second belt and a second motor for controlling the position of the recovery
lifter independently of said supply lifter.

32. (Currently Amended) The part feeding device according to claim 29, wherein
~~said supply lifter, said recovery lifter, and said~~ is mounted on a movable table
~~are housed in a rack lift chamber having a door, said door including a lock,~~
wherein ~~said door controller means includes means for~~ is automatically
~~locking said door while said supply lifter or said recovery lifter is in operation for~~
~~preventing access thereto to said rack lift chamber, and~~
wherein said controller means further includes means for unlocking said lock
so that said door is able to be opened when both of said recovery lifter and said
supply lifter are is in an inactive position to enable an operator to add part racks
while operation of said sample analyzer is uninterrupted.

33. (Currently Amended) The part feeding device according to claim 29, wherein
further including
an alarm means for notifying an operator when the quantity is sounded should
~~the number of part racks remaining on said supply lifter reach a predetermined~~
threshold.

34. (Currently Amended) The part feeding device according to claim 29,
wherein further including
a display, said controller means including means for displaying a quantity of
new part racks that can be added to said supply lifter on said display ~~said recovery~~
~~lifter or said supply lifter is raised and lowered through a space limited by a guide~~

~~wall arranged to fit the size of said part rack, said guide wall being mounted to and moveable with said movable table.~~

35 - 36. (Canceled)

37. (New) A method of controlling an automatic analyzer that uses parts arranged in part racks, said analyzer including a supply lifter for raising a plurality of part racks holding parts to a rack separation station, while keeping the part racks in a stacked configuration, and a rack separator at the rack separation station for separating and retaining an uppermost part rack of said part racks, the method comprising:

raising the supply lifter to raise the plurality of part racks in the stacked configuration to the rack separation station for separating an uppermost part rack of said part racks from remaining said part racks so as to retain the separated uppermost part rack at said rack separation station;

sensing the uppermost part rack using a first sensor;

sensing a second part rack located under the uppermost part rack using a second sensor;

making a determination as to whether or not said uppermost part rack has been properly separated from the remaining part racks on the basis of sensed information received from said first and second sensors; and

judging whether to continue operation or interrupt operation of the analyzer based upon said determination.

38. (New) The method according to claim 37, further including the step of
activating an alarm to notify an operator if judgment is made to interrupt
operation of the analyzer.